

**Ministry of Health of Ukraine**  
**Poltava State Medical University**  
**Department of internal medicine No 3 with phthisiology**

Approved  
at the meeting of the Department of Internal  
Medicine No. 3 with Phthisiology  
Protocol № \_\_\_\_\_  
"\_\_" \_\_\_\_\_ 20\_\_\_\_ p.  
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**Methodical instructions**  
**for the independent work of students**  
**during the preparation for a practical lesson and in class**

Academic discipline	Phthisiology
<i>Modul №</i>	1
Theme of the lesson 7	Prophylaxis of tuberculosis. Infection control. Curation of patients.
Course	4
Faculty	International
Specialty	Medicine

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**1. Topicality of the theme:** A prophylaxis of tuberculosis (TB) is a complex of measures directed on warning and distribution of TB. Foremost it is national business in which a basic carrying out role belongs to the medical workers. The question of prophylaxis of TB touches everybody, family. Therefore knowledges of bases of prophylaxis of TB will be instrumental in warning of origin of TB. Illness easier and more cheap to warn, than to treat, especially it touches TB, in fact treatment of this illness too expensive, except for it, illness can purchase chronic motion and completed lethally.

## **2. Specific objectives:**

**To analyze:** necessity of prophylaxis of TB

**To explain:** epidemiology danger of the pesthole of TB infections.

**To offer:** ways of diminishing of distribution of TB.

**To classify:** cells of TB of infection; kinds are a prophylaxis.

**To interpret:** normal motion of after vaccination period and possible complications.

**To draw:** mechanism of forming of immunity at the vaccination of BCG.

**To analyze:** efficiency of specific prophylaxis of TB

**To make:** a plan of disease measures is in the cell of TB of infection; plan of measures for the early exposure of patients on TB.

## **3. Base knowledge, abilities, skills, are necessary for study themes (interdisciplinary integration)**

<b>Names of previous disciplines</b>	<b>Skills are got</b>
Microbiology	To know a concept about a vaccination, types of immunity (гуморальный, cellular), mechanisms of their development
Pharmacology	To know a pharmacokinetics, pharmacodynamics of ATP. Testimony, contra-indication. . Using of ATP for chemoprophylaxis.
Propedeutics of internal illnesses	Able to collect complaints, anamnesis of disease and life, conduct the objective inspection of patient (examination, palpation, percussion, auscultation)
Propedeutics of child's illnesses	To know the flow of after vaccinated period. Forming of rib after the vaccination of BCG. Selection on a vaccination and revaccination.
Hygiene	To know rules broadly speaking hygienic mode, which must adhere to a patient on TB, doctor, persons which are in touch with this patient.

## **4. Task for independent work during preparation to employment**

### **4.1. List of basic terms, parameters, descriptions which a student must master at preparation to employment:**

<b>Term</b>	<b>Determination</b>
Prophylaxis of TB	it is a complex of state and sanitary facilities, directed on warning and distribution of TB
Social prophylaxis	it is a complex of state measures, which foresee the improvement of welfare, normalization of labor and rest, improvement of habitation terms and defence of environment

Epidemic supervision (monitoring)	it is the system of the permanent dynamic and multidimensional looking after the epidemic process of TB, after an epidemiology situation on the whole on certain territory in a concrete period of time with the purpose of rationalization and increase of efficiency of prophylactic measures.
Infectious control	it is a complex of measures directed on warning of transmission of TB of infection, infections of healthy persons and super infection patients on TB.
Sanitary prophylaxis	It is making healthy of cells of TB of infection, sanitary and veterinary supervision, lead through of sanitary-enlighten work, and also early exposure, isolation, treatment of first found out patients on TB.
Chemoprophylaxis of TB	It is setting of ATP with the purpose of increase of resistant of organism, against TB of infection to the healthy persons, which have an enhance able risk of disease, preventions of intensifying or relapse of disease.
Hearth of tubas. infections or epidemic hearth of tuberculosis	It is habitation, where the consumptive lives from secreting MBT and people which live together with him.
Vaccine of BCG	It is a living, apatogenous, avirulent culture of MBT, which provokes making of non-sterile, cellular immunity for a vaccinated child.

#### **4.2. Theoretical questions are to employment:**

1. The concept of "prevention of tuberculosis."
2. What are the types of tuberculosis prevention?
3. The concept of "Foci of tuberculosis infection."
4. What categories are foci of tuberculosis infection.
5. Social prevention.
6. Sanitary prevention.
7. What is the BCG vaccine?
8. Technology vaccination and revaccination with BCG vaccine.
9. Mechanism of immunity in vaccination with BCG vaccine.
10. Indications and contraindications for vaccination and revaccination BCG vaccine.
11. Possible complications that occur after vaccination and revaccination with BCG vaccine.
12. Chemoprophylaxis TB.

#### **4.3. Practical works (task) which execute on employment:**

1. What is once injection dose of the vaccine BCG?
  - A. 0,025 mgs
  - B. 0,5 mgs
  - B. 0,25 mgs
  - Г. 0,05 mgs
  - Д. 0,005 mgs
2. What permanent contraindication for the vaccination BCG?
  - A. Prematurely bornness (mass of body is less than 2 kg)

- B. Festering-septic diseases
  - B. Any sharp diseases
  - Г. Maternity traumas with neurological symptomatic
  - Д. Generalization infection of BCG for other children in family
- 3. What interval between the lead through of test of Mantoua from 2TU and revaccination against TB?**
- A. No less than 3 days and not more than 2 weeks
  - B. An interval has no value
  - B. One not less month
  - Г. No more one month
  - Д. No less than 3 days and not more than 1 month
- 4. Who does chemoprophylaxis TB appoint?**
- A. To the children with primary TB complex
  - B. To the patients with doubtful activity of tuberculosis
  - B. To the persons with the opened form tuberculosis
  - Г. To the patients by the chronic form of TB in the period of remission
- 5. What measures is component part of social prophylaxis of TB?**
- A. Making healthy of hearths of tubercular infection
  - B. Isolation of patient by tuberculosis
  - B. Sick-list of incapacity within 10 months
  - Г. Free sanatorium-resort treatment of patient tuberculosis
  - Д. Early exposure of tuberculosis among children, teenagers, adults
- 6. Through what term after a vaccination does specific ant tuberculosis immunity develop the vaccine of BCG?**
- A. In a month
  - B. In 6-8 weeks
  - B. In 1
  - Г. In 4-6 months
  - Д. In 7 years
- 7. What measures is component part of sanitary prophylaxis of TB?**
- A. Work in the cells of tubercular infection
  - B. Chemoprophylaxis of the infected children
  - B. Receipt of sheet of incapacity within 10 months
  - Г. Control after a timeliness, plenitude and quality of lead through of ant tuberculosis measures in an area
  - Д. All of measures are component part of sanitary prophylaxis of tuberculosis
- 8. What injection dose of vaccine of BCG-M?**
- A. 0,025 mgs.
  - B. 0,5 mgs.
  - B. 0,25 mgs.
  - Г. 0,05 mgs.
  - Д. 0,005 mgs.
- 9 What temporal contra-indication to revaccination against TB?**
- A. Infected tuberculosis or tuberculosis in the past.
  - B. Positive or doubtful reaction for a sample Mantou from 2 TU PPD.
  - B. Complication on previous introduction of vaccine of BCG.
  - Г. Malignant diseases of blood or new formation.
  - Д. Temporal contra-indications among resulted are not present.

- 10. Through what time domain after revaccination of BCG is it possible to conduct other prophylactic inoculations?**
- A. In 2 months.
  - Б. In 1 month.
  - В. In 6 months.
  - Г. In 3-4 weeks.
  - Д. In 2 weeks.
- 11. What factor is major at determination of epidemic danger of cell of TB of infection?**
- A. Sanitary terms in which the sick lives and his family.
  - Б. Massiveness of secreting MBT.
  - В. A presence is in family of children and teenagers.
  - Г. Clinical form of TB of process.
  - Д. Term of existence of cell.
- 12. What must be done after the careful inspection of hearth of TB of infection on condition that all of contact persons are healthy, but infected on TB?**
- A. To register and conduct immunization of BCG-M a vaccine.
  - Б. To register and look after the dynamics of x-ray picture.
  - В. To register and appoint chemoprophylaxis.
  - Г. On an account to take not necessarily, to appoint chemoprophylaxis.
  - Д. To register and look after the dynamics of tuberculin sensitiveness.
- 13. How long are there under the supervision of phthisiologist persons which were in a domestic contact with sick active TB?**
- A. During all of time of contact and year after stopping of contact.
  - Б. During all of time of contact.
  - В. One year.
  - Г. During all of time of contact and year after stopping of contact.
  - Д. Look after only in the period of inspection.

#### **Theme contents:**

A **prophylaxis** of tuberculosis is a complex of state, medical-sanitary measures, what origins and distributions of tuberculosis directed on warning.

Select a specific and non specific prophylaxis of tuberculosis.

A specific prophylaxis is a complex of measures which are directed against the exciter of tuberculosis. To it take a vaccination, revaccination and drugs prophylactic (primary and secondary).

A non specific prophylaxis is a complex of social and sanitary measures which are directed on the improvement of social and disease welfare of population. A social prophylaxis is a complex of national measures, which provides 80% efficiency in the decline of morbidity and includes for itself the followings measures:

- improvement of standard of living of people;
- normalization of labor and rest;
- improvement of жилищно-бытовых terms;
- protecting of environment is from contamination;
- propaganda and providing of healthy way of life of people.

A **social prophylaxis** which is really executed has a large influence on epidemiologic indexes on tuberculosis, because tuberculosis was and remains socially dependent illness. A level of morbidity on tuberculosis in a country is one of basic

indexes that characterizes the state of health of population which removes its social and economic welfare. Between morbidity on tuberculosis and standard of living, consisting of economy of country is direct dependence. It is possible to make an example: the greatest morbidity is on tuberculosis in India, China, countries of Africa, Latin America et cetera. These countries after the economic position are on the last places in the world. And vice versa is Germany, USA, England, France, Sweden, Italy have a high economic level of development and morbidity on tuberculosis is 10 – 18 on 100 thousands of population. In this connection everything that is done for the increase of standard of living of population can be examined and as measures which are directed on the prophylaxis of tuberculosis.

Regulated legislative and normative acts:

- free treatment of patients is on TB;
- improvement of housings terms to the patient with bacilli tuberculosis (grant of the isolated apartment);
- delivery of sheet of temporal incapacity is to 10 months;
- dislocated of patients which treat oneself ambulatory, on more easy labor, with the maintenance of previous level of pay-envelope;
- a free grant of sanatorium help and medicines is on all of the stages of treatment.

**Sanitary prophylaxis** is a complex of measures which are directed on the early exposure of patient's tuberculosis of people and animals, liquidation of pesthole tuberculosis, lead through of disinfection measures and sanitary educational work among a population.

**Epidemiology pesthole of TB infection** is a place, where a patient (secreting MBT) with lives tuberculosis. Divide epidemiology cells into three groups depending on massiveness of secreting MBT, presence of children and teenagers at a cell, ЖИТЛОВО-ПОБУТОВИХ terms and observance in pesthole of sanitary-hygienic requirements.

To the **first group**, to epidemiology most dangerous, take all of unhappy cells in which patients live with permanent or periodic secreting MBT and also cells in which for patients find out the negligible quantity of mbt of tuberculosis, but on conditions that children and teenagers live in a cell, or takes a place even one of next aggravating factors. It touches those cells, where patients practice upon an alcohol.

To the **second group** - epidemiology threatening, take cells, in which secreting MBT (permanent, periodic) live with which adults, or patient of not secreting MBT, contact only and in a contact with him there are children on condition of absence in the cell of other aggravating factors. .

To the **third group** – epidemiology happy, take cells in which patients live without secreting MBT, in a contact with him only there are adults, in default of aggravating factors.

There is classification of pesthole after Nezlin, analogical to result before:

- unfavorable pesthole (belongs to I of group);
- threatening (belongs to 2 of group);
- favorable (belongs to 3 of group).

The translation of pesthole of tubercular infection from one epidemiology group to other carries out doctor-epidemiologist jointly with a district phthisiologist at a change in the cell of terms which promote or reduce his unconcern.

**Sanitary measures** include in pesthole: isolation of patient (first discovered or with a relapse, intensifying of disease), lead through of current and final дезінфекції,

exposure, registering and inspection of contactor persons (a clinical supervision is carried out after a 5.2 group of clinical account), lead through of social and sanitary-hygienic measures. Sanitary educational work in the epidemiology cell of tuberculosis consists in the lead through of conversations with patients and inhabitants by a district phthisiologist, trained nurse about the observance of the sanitary-hygienic mode of patient: харкотиння is collected in a container, at expectoration of sputum to unsoiled by it a hand, dressed, linen, shoe, apartment. A container is filled a sputum on 6 – 12 hours dip in the enameled tableware with a 5% solution of Chloramines which covers him, then харкотиння is united in the sewage system, and a container is washed in regular fashion, whereupon boil 30 – 40 min., or process in autoclaves. Treatment of container, tableware sick is conducted in gloves which throw out after the use.

A patient must have separate tableware, personal things, towel, bed linen, which after the use process in disinfected camera.

In hearth TB infection and in anti-tuberculosis hospitals conduct disinfection, which is divided by current and final. Final disinfection conduct after leaving sick (move, death), here not only an apartment but also articles of way of life process by disinfected solution (Chloramines 2% - 5% - 10%, chloric lime 2,5% - 5%), dressed, linen, tableware boiling or in disinfection camera. Current disinfection is conducted daily with the use of higher adopted disinfected solution, here process stands, beds, chairs which are used by a patient.

With the purpose of defusing of MBT in a tubercular cell carry out ventilation, ultraviolet rays in apartment (rooms). It is necessary to use a multi-layered gauze or special mask contacting with patient persons.

One of prophylactic measures of tuberculosis there is an early exposure of this disease.

The timely and early exposure of patients with tuberculosis – it establishment of diagnosis tuberculosis in such period of development of illness, when it is only engendered or has the limited form and its motion takes a place without destructive changes in tissue and without secreting MBT and patients in this period are not the source of infection tuberculosis of circumferential, and treatment of such patients ends with complete convalescence.

Adults have fluorography the timely method of exposure of tuberculosis, although subject a fluorography inspection and teenagers, beginning from 14 – 18 (depending on epidemiology situation of tuberculosis). Fluorography is conducted 1 time per 2 years, if morbidity not more than 30 on 100 thousands of population. One time on a year inspect “obligatory contingents”: workers of food, child's, educational establishments, inhabitants of dormitories, workers of stock-raising farms, and also persons with a high risk illness of tuberculosis (patients with saccharine diabetes, gastritis, ulcerous illness of stomach, with alcoholism and narcotic dependence, HIV-infestation and patients with AIDS).

The early exposure of infected and local forms of tuberculosis for children and teenagers is carried out by the test of Manitou from 2 TU, which is conducted annually, beginning from 12-monthly age and to 14, and also conducted children, to not instilled the vaccine of BCG in a term more 2-th months after an extract from a maternity hospital.

But a method of fluorography is from the economic point of view, and from scientific, for today does not justify itself. To find out one case of tuberculosis the method of fluorography it is necessary to inspect 1 – 1,5 thousands of persons and cost

of such inspection makes 16 thousand hrvnis, and the exposure of bacilli patient costs 45 thousand hrvnis. Today widely apply exposures consumptive lights the method of stroke (bacterioscopic research of sputum is on MBT) – it a method is rapid and inexpensive. On 222 it is found out the inspected persons by this method of one patient with tuberculosis and cost of these exposure 923 hrvnis, but not 16 thousand hrvnis, as at fluorography

In this connection, patients who cough during 2-weeks and anymore, necessarily conduct the inspection of sputum by the bacterioscopy of stroke on MBT.

To the specific prophylaxis belong vaccination which is conducted the vaccine of BCG.

**Vaccine of BCG** – it living, hyposthenia, apathogenous, avirulente, but with the stored immunological properties culture of MBT.

First the French scientists of Calmette and Guerin got the culture of vaccine of BCG in 1913 years after 13 of sub culturing of MBT of bovine of type on nourish environments with addition a gall. A gall reduces pathogenic properties of MBT. The first standards of vaccine were in solution and had short-term shelf-life and wide application did not get. In a present tense the vaccine of BCG is got as a result of growing by the cultures of MBT on the special artificial nourishing environments and after the vacuum drying pack up a vaccine for 1 mg (20 doses) in one ampoule to which ampoules are added from 2 ml of solution. There is 4 – 6 – 10 million MBT in 1 ml of vaccine. One dose for a vaccination makes 0,05 mg of dry vaccine which 50 – 60 thousands of MBT are in.

A vaccination is conducted on 3 days by lives of child, on condition of absence of contra-indications.

**Contra-indication** is for the lead through of vaccination

1. Temporal (4 – 6% new-born):

- defeat of skin (pemphigus, pyoderma, abscesses, phlegmon);
- allergic diseases, diathesis;
- hemorrhagic syndrome;
- sepsis;
- hypotrophy (mass of body is less than 2,0 kg);
- maternity trauma by the defeat of CNS;
- flu, pneumonia;
- feverance anymore  $37,5 \pm$  of C.

2. Permanent (in 0,5% new-born):

- fermentopathy is innate;
- the anomalies of development are innate.

A vaccine in the volume of 0,1 ml is entered by indermic on an external surface between overhead and middle third of shoulder. In 4 – 6 weeks in place of introduction of BCG infiltration appears 5 – 10 mm in a diameter, sometimes пустула or necrosis appears in a center, which in course of time dries with formation of crust. An ulcer which heals over with formation of after vaccination rib appears under it. In a norm an ulcer can be saved during to 6 months. If it is saved longer, ran across a vaccination consider complicated. After vaccination a scar is the important element of estimation of the executed vaccination. If a vaccination is conducted correctly, a scar has the regular rounded shape, elastic, shallow, 5 – 10 mm in a diameter. At hypodermic introduction of vaccine a scar can be deformed, rough, and sometimes keloidal.



### **Complication of vaccination:**

- “BCG generalization of infection” – 0,02%;
- an ulcer 10 mm in 6 months and anymore;
- cold abscesses, phlegmons;
- lymphadenitis regional in 4 months;
- abscesses;
- keloid scars 10 mm and anymore;
- lupus;
- BCG is a sepsis;
- BCG is ostitis;
- Phenomenon of Koch.

Looking after vaccination and district internists and medical sisters of general medical network, which through 1, conduct revaccination children and teenagers, 3 and 12 months after an inoculation check up a vaccine reaction with registration of size and character of local reaction (papule, pustule with formation of crust, with a selection or without him, rib, pigmentation). This information is registered in the proper medical document (in registration forms № 63 № 26 № 12). If an after vaccinated rib does not appear, and test of Mantua from 2 TU remains negative, it is possible to consider that immunization is ineffective. It follows such children to repeat an inoculation, but not early than as in 2 years after a vaccination and in 1 after revaccinated, with the obligatory lead through of test of Mantua from TU PPD 2 weeks prior to an inoculation.

**Revaccination** is conducted in 7 years, on condition of absence of sensitiveness to the tuberculin (negative test of Manitou). The technique of lead through of revaccination is such, as well as vaccinations. Except for an ordinary vaccine BCG utilize BCG-M for a vaccination:

- prematurely new-born with mass of body 2 kg and anymore (less);
- at the removal of contra-indications for children, not vaccinated in a maternity hospital ( if passed more than 2 months and a child not vaccinated, in eve a vaccination the previous raising of test of Manitou is needed from 2, for the exposure of infected which is contra-indication to the vaccination).

### **Contra-indication for revaccination is:**

<b>Contra-indication</b>	<b>Admission of inoculation</b>
1. Infecting TB or TB in the past	Contra-indicated
2. Positive or doubtful reaction of Manitou from 2 TU PPD	Contra-indicated
3. Complicated a reaction on previous introduction of vaccine of BCG	Contra-indicated
4. Sharp diseases, chronic diseases in the stage of sharpening, decompensation	After convalescence (ремиссии) not before, than in 1 month
5. Allergic (dermal and respirator) in the stage of sharpening	After convalescence after the conclusion of specialist
6. Malignant illnesses of blood and new formation	Contra-indicated
7. Immunodeficit states. Treatment immunodepresants. HIV-infected	After the conclusion of specialist after immunological research
8. Pregnancy (all of terms)	Contra-indicated

Other prophylactic inoculations can be conducted with an interval 2 months to and after revaccinated of BCG.

### **Complication of vaccination and revaccination of BCG**

It should be remembered that a vaccination and revaccination of BCG does not protect an organism from infecting and disease on TB. In addition, there can be complications on its introduction. As a rule, they carry local character and marked comparatively rarely – in 0,02% cases. Before such complications belong: hypodermic cold abscess, ulcer in place of introduction of vaccine (10 mm and anymore in a diameter), adenitis of regional lymphatic knots, colloid scars

**Underdermic cold abscess.** Appearance of him is predefined violation of technique inwardly a skin introduction and by the hit of preparation under a skin. A cold abscess is painless, can arise up in 1-8 months after a vaccination (revaccination). During 2-3 months he independently resolves or softened with appearance of fluctuation, and in a number of cases there is fistula, through which a pus is selected odorless. In place of cold abscess a deep ulcer can appear with disrupt edges and specific granulation fabric. A scar appears at cicatrisation of ulcer.

#### *Treatment:*

- 1) bandages with hydrocortisone ointment;
- 2) sucking of caseous the masses a syringe each 2-3 days and introduction to the area of cold abscess 5% solution of salusid or isoniasid (a dose settles accounts in accordance with mass of body of child, 5-10 mg/kg);
- 3) at formation of ulcer of powder from isoniasidum or rifampisinum;
- 4) in 2-3 months after ineffectual conservative treatment a cold abscess is deleted together with a capsule surgical a way.

**A superficial ulcer** can appear in place of introduction of vaccine of BCG in 3-4 weeks after a vaccination or revaccination.

*Treatment:* powders isoniasidum with addition ATP ointment on the edges of ulcer for warning of the second infection.

**After vaccination lymphadenitis of lymphatic knots**, as a rule, registers in new-born in 2-3 months after a vaccination at presence of normal local reaction. Characteristic is the without symptoms beginning increase of lymphatic knots (arm-pits, over- and underclavicular to 1,5-5 cm in a diameter). Sometimes in a lymphatic knot there can be softening influence and fluctuation with next formation of fistula, through which a pus is selected odourless.

#### **Treatment:**

- 1) biopsy of lymphatic knot with the exception of his maintenance and introduction to the cavity 5% solution of salusid;
- 2) washes of rifampicin are 0,45 grammas. rifampicin dissolve in 20% - 100 ml solution of dimexid;
- 3) delete of 1 cm a calcination size and anymore together with a capsule.

**Keloid scars** in place of cicatrisation after a vaccine reaction – it connection tissue tumor similar education, which comes forward above the surface of skin, corporal for a gum-blush color, very dense consistency by touch. More frequent than all they meet for the revaccinated girls of prepuberty age and teenagers with allergic organism or in the case of the ever-higher conducted inoculation (on the area of humeral to the joint which results in the irritation of after vaccinated rib tissue of clothes). Usually after vaccinated keloids is not had tendency to growth. A weakness to growth is fed by large keloid (more

than 1 cm), that is why they are attributed to complications. Round a scar there is a rose «chaplet» and sense of injection appears, heartburn, itch.

**Treatment:** utilize the method of their injection 0,5% by solution of hydrocortisone emulsion of 1 ml with a 0,5% solution of novocain 1 time per a week, by tuberculin needles in 5-6 places in the layer of keloid (5-10 injection on a course). Possibly to alternation hydrocortisone from lidaza (64 U for children more senior 12 years, 32 U for children 7-11). The most effective treatment of keloid is in the phase of rest.

In the case of ineffectiveness of the noted therapy apply or after some period of rest again growth of keloid recommenced treatment of pirogenal is rotated, by a lipase with hydrocortisone. Pyrogenalum is entered daily in muscle, since 25 minimum pirogenic doses (MPD). During 10 days a dose is gradually increased children to 150 MPD, to the teenagers – to 200 MPD. Continue to enter a maximal dose to completion of maximal course are 30 injections, then take a break 3 weeks, whereupon conducts injection of scar a lipase in a dose 64 UO in a day, only 10 injection in 1, 4, 7, 10 days in one syringe with a lipase enter 25 mgs hydrocortisone.

Surgical treatment of keloids is contra-indicated, because it leads in 1-3 months to the relapse with education of keloid in 2-3 times of greater size, what to the operation.

A purpose of lead through of vaccination and revaccination is making of non-sterile cellular anti-tubercular immunity. Most researchers which was engaged in a vaccination consider although, that it does not protect fully a man from tuberculosis, but considerably diminishes authenticity of disease or instrumental in minimization of harm which is inflicted this illness. The small forms of tuberculosis more frequent limited, develop for vaccinated people. The continuous vaccination of new-born is conducted in our country, and abroad in some countries a vaccination is done after testimonies.

To the **specific prophylaxis of tuberculosis belongs** and **drugs-prophylaxis**, the founder of which is Oh. Zarini. Inculcated to practice in 1955 year. It is considered that a method allows reducing frequency of disease on tuberculosis or his relapses in 2 – 7 times. Select primary drugs-prophylaxis and second. **Primary drug-prophylaxis** is conducted healthy, germ-free tuberculosis people which contacted with patients with the opened form of tuberculosis. They are under supervision on a 5.2 group of clinical account in a time of contact from secreting MBT patient and yet 1 year after his stopping. Primary drugs-prophylaxis is conduct by isoniazidum during 2 – 3 months.

**Second drugs-prophylaxis** appoints infected MBT and that, which carried tuberculosis. For the prophylaxis of sharpening and relapses appoint 2 anti-tuberculosis drugs, necessarily one of isoniasidum and pirazinamidum or etambutholum 2 times per a year during 2 – 3 months (spring, autumn).

**Chime(drugs)-prophylactic** is setting of ant tuberculosis preparations with the purpose of increase of resistant of organism, against TB of infection to the healthy persons, which have an enhance able risk of disease, preventions of sharpening or relapse of disease.

Chemoprophylaxis is divided into primary and second.

**Primary chemoprophylaxis** behaves germ-free persons from the cells of TB of infection. A purpose is prevention of infection, to infecting of MBT and disease on TB. This *chemoprophylaxis* is used:

- to the children, teenagers, grew to healthy persons from domestic contacts from patient with MBT+ or with to the patients by the active form of TB; appoint isonoasid

for 0,3 g (to the children 8-10 mgs/kg) for 3 months 2 times per a year during all of period of contact and 2 after his stopping;

- new-born, graft the vaccine of BCG, which borned from illness of mothers, too late discovered – apply also isonoasid (8-10 mgs/kg) for 3 months 1 one time in a year during 2 years.

**Second chemoprophylaxis** is conducted with the purpose of prevention:

1) to the disease:

a) first infected (to put teenagers with the turn of tuberculin reactions); chemoprophylaxis is conducted a continuous course isoniasid during 3 months;

б) to the infected persons which have a contact from patients the active form of TB; accept isonoasid 3 months 2 times per a year

2) to the relapse of TB – at persons which after illness on TB and concomitant diseases, large remaining changes, HIV-infected, have; drugs-prophylaxis is conducted during 3 months 2 times per a year, appoint isoniasid in combination with 1 from ATP (etambutol 0,8-1,2; rifampicin 0,45-0,6 g).

To the persons from the hearths of TB of infection, where patients select drugs resistant MBT chemoprophylaxis is not conducted.

### **Materials are for self-control:**

**A. Task for self-control (tables, charts, pictures, graphic arts):**

TASK	POINTING	ANSWER
To give the clinical estimation of after vaccination scar	Place of formation of after vaccination scar and his description.	
Chemoprophylaxis	Contingents, who chemoprophylaxis is conducted; preparations, their amount and duration of receipt.	
Disease measures are in the hearth of tubercular infection	Measures which are conducted in the hearth of tubercular infection depending on the degree of his danger.	
Vaccination, revaccination	Terms, terms and technique of lead through. Contra-indication. Complications and their treatments are possible.	
Early exposure of tuberculosis among children, teenagers and grown man population	To know, what methods of inspection and their multiple of lead through are used for early diagnostics of tuberculosis for children, teenagers, adults.	

### **B. Task for self-control**

1. For the woman illness on dissemination tuberculosis (Mbt+), birthed a healthy child is worn, weighing 3800 g, Right after birth a child was isolated from sick mother.

**What measure does need to be carried out in relation to a child?**

2. The teenager of 14 years lives with a father and grand-dad. A grand-dad is ill the opened form of tuberculosis. A teenager constantly is in touch with sick tuberculosis. It follows a child to conduct revaccination.

**What dose of vaccine of BCG it necessary to enter a teenager at that rate?**

3. To the child 6 months. In a maternity hospital not was vaccination in connection with a disease on a sharp respirator viral infection. Presently a child is healthy and it follows it to conduct a vaccination.

**What research does need to be done a child for the decision of possibility of lead through of vaccination?**

4. In specialized maternity separated for a woman the sick opened form of TB prematurely born child. Mass of body of child is 2300 g, growth is 50 cm. A child is healthy.

**What must tactic be in relation to a child?**

5. The healthy worn child borned for a woman, weighing 3 kg, which got 8 marks after a scale Apgar. The father of child is ill the opened form of TB (Mbt+) and is at home.

**What must be tactic of pediatrician in relation to a child?**

### **Literature**

#### **Basis:**

1. Phthisiology : a teaching manual / B.F. Moskalenko, V.I. Petrenko, G.O. Timoshenko – Kiev: Medicina, 2012. – 216 p.
2. Phthisiology : textbook / V.I. Petrenko, O.K. Asmolov, M.G. Boyko [et al.] ; edited by V.I. Petrenko. – Kiev : AUS Medicine Publishing, 2015. – 416 p.

#### **Supplementary**

1. Tuberculosis : manuel for teacher, students and doctors / A.G. Yareshko, M.V. Kulish. – Poltava : Poltava Literator, 2011. – 156 p.

#### **Information resources**

1. Childhood TB for Healthcare Workers: an Online Course. – Access mode: <https://childhoodtb.theunion.org/courses/en>
2. WHO: tuberculosis. – Access mode: <http://www.who.int/tb/en/>